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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/544,492	04/07/2000	Swain W. Porter	112076-138333	1773

25943 7590 02/10/2005

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EXAMINER

SHAH, NILESH R

ART UNIT PAPER NUMBER

2127

DATE MAILED: 02/10/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 09/544,492	<b>Applicant(s)</b> PORTER, SWAIN W.	
	<b>Examiner</b> Nilesh Shah	<b>Art Unit</b> 2127	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 10 September 2004.
- 2a) ☒ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-16 and 19-26 is/are rejected.
- 7) ☒ Claim(s) 17 and 18 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

1. Claims 1-26 are presented for examination.

### ***Claim Objections***

2. Claims 17 and 18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-12 and 16, 19-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kane et al (5,596,739) (hereinafter Kane).
5. As per claim 1, Kane teaches a processor comprising:

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a control register to store a current privilege level for a task (col. 18 lines 6-20; col. 10 lines 29-57).

a privilege remapper coupled to the control register and adapted to remap the stored task privilege level (col. 10 lines 29-32; col. 18 lines 45-57).

Kane does not specifically teach the use dynamically remapping. It would have been obvious to equate real time adjustment of privilege level to dynamically remapping because both occur immediately. Therefore it would have been obvious to one skilled in the art at the time of the invention to include the use of a dynamically remapper.

6. As per claim 2, Kane teaches a privilege remapper comprises a register to store a plurality of remapped current privilege levels to be accessed using the stored current privilege level prior to runtime privilege checking (col. 18 lines 50-57; col. 10 lines 29-57).
7. As per claim 3, Kane teaches a privilege remapper comprises a storage array to store a plurality of set of remapped current privilege levels to be accessed using a configuration value and the stored current privilege level prior to runtime privilege checking (col. 18 lines 50-57; col. 10 lines 29-57).

8. As per claim 4, Kane teaches a privilege remapper comprises one or more logical elements to logically alter one or more bits of the stored current privilege level prior to runtime privilege checking (col. 10 lines 29-57; col. 18 lines 50-57).
9. As per claim 5, Kane teaches a privilege remapper further comprises at least one selector coupled to at least one of the one or more logical elements to effectuate conditional performance of said logical alteration for at least one bit of the stored current privilege level prior to runtime privilege checking (col. 18 lines 50-57; col. 10 lines 29-57).
10. As per claim 6, Kane teaches a processor further comprises at least one selector coupled to the control register and the privilege remapper to effectuate conditional performance of said remapping of the stored current privilege level prior to runtime privilege checking (col. 18 lines 50-57; col. 10 lines 29-57).
11. As per claim 7, Kane teaches a method comprising:  
storing a first current privilege level for a task (col. 18 lines 6-20; col. 10 lines 29-57).  
remapping the first current privilege level to a second task privilege level prior to runtime privilege checking to effectuate a different execution privilege level for the task (col. 18 lines 50-57; col. 10 lines 29-57). Kane does not specifically teach the use dynamically remapping. It would have been obvious to equate real time adjustment of privilege level to dynamically remapping because both occur

immediately. Therefore it would have been obvious to one skilled in the art at the time of the invention to include the use of a dynamically remapper.

12. As per claim 8, Kane teaches a remapping comprises accessing a register to retrieve a selected one of a plurality of remapped current privilege levels stored in said register, using the stored first task privilege level, prior to runtime privilege checking (col. 18 lines 50-57; col. 10 lines 29-57).
13. As per claim 9, Kane teaches a remapping comprises accessing a storage array to retrieve a selected one of a plurality of remapped current privilege levels stored in said storage array in a set-wise manner, using a configuration value and the stored first task privilege level, prior to runtime privilege checking (col. 18 lines 50-57).
14. As per claim 10, Kane teaches a remapping comprises logically altering one or more bits of the stored first current privilege level, prior to runtime privilege checking (fig. 2a, col. 5 lines 23-30; col. 10 lines 29-57).
15. As per claim 11, Kane teaches altering being conditionally performed (col. 18 lines 50-57, fig. 2a, col. 5 lines 23-30).
16. As per claim 12, Kane teaches a remapping being conditionally performed (col. 18 lines 50-57, fig. 2a, col. 5 lines 23-30).

17. As per claim 16, Kane teaches a method comprising:

attributing a first current privilege level to a first collection of programming instructions, said first current privilege level being different from a second current privilege level assigned to a second collection of programming instructions, resulting in said first collection of programming instructions to execute with a first relative current privilege relationship to said second collection of programming instructions at execution time (col. 18 lines 4-30; col. 10 lines 29-57);

remapping said first current privilege level to a third privilege level prior to runtime privilege checking to cause the first collection of programming instructions to execute with a second different relative privilege relationship to said second collection of programming instructions (col. 18 lines 51-57; col. 10 lines 29-57).

18. As per claim 19, Kane teaches a method comprising:

attributing a first more privileged current privilege level to a first subset of least privileged tasks attributed with a least privileged current privilege level (col. 18 lines 4-30; col. 10 lines 29-57);

remapping said first more privileged current privilege level attributed to said first subset of least privileged tasks to said least privileged privilege level, and remapping said least privileged current privilege level attributed to residual ones of said least privileged tasks prior to runtime privilege checking to cause said first

subset of least privileged tasks to execute with lesser privileges than said residual ones of the least privileged tasks (col. 18 lines 51-57).

19. As per claim 20, Kane teaches a least privileged current privilege level of said residual ones of said least privileged tasks are remapped to said first more privileged current privilege level (col. 18 lines 51-57; col. 10 lines 29-57).

20. As per claim 21, Kane teaches a method comprising:

attributing a first lesser privileged current privilege level to a first subset of most privileged tasks attributed with a most privileged current privilege level (col. 18 lines 4-30);

remapping said first lesser privileged current privilege level attributed to said first subset of most privileged tasks to said most privileged current privilege level, and remapping said most privileged privilege level attributed to residual ones of said most privileged tasks prior to runtime privilege checking to cause said residual ones of the most privileged tasks to execute with lesser privileges than said first subset of most privileged tasks (col. 18 lines 51-57; col. 10 lines 29-57).

21. As per claim 22, Kane teaches wherein said most privileged current privilege level of said residual ones of said most privileged tasks are remapped to said first lesser privileged current privilege level (col. 18 lines 4-30; col. 10 lines 29-57).

22. As per claim 23, Jardine teaches the use of a processor comprising:



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a control register to store a current privilege level (col. 18 lines 4-30; col. 10 lines 29-57); and

a privilege remapper coupled to the control register and adapted to remap the stored current privilege level prior to runtime privilege checking (col. 18 lines 51-57; col. 10 lines 29-57; col. 10 lines 29-57).

23. As per claim 24, Kane teaches the use of an processor further comprises at least one selector coupled to the control register and the privilege remapper to effectuate conditional performance of said remapping of the stored current privilege level prior to runtime privilege checking (col. 18 lines 5-30, col. 18 lines 51-57; col. 10 lines 29-57).

24. Claim 25 is rejected based on the same rejection as claims 1 above.

25. Claim 26 is rejected based on the same rejection as claims 6 above.

26. Claims 13, 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Parmar et al (hereinafter Parmar) (3,916,385) in further view of Kane.

27. As per claim 13, Parmar teaches a processor having a 4-ring privilege protection scheme, where tasks attributed with a lower ring current privilege level is more privileged than tasks attributed with a higher ring current privilege level, a

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method comprising (e.g. fig 2, col. 4 lines 24-60, col. 9 line 45 – col. 11 line 50; col. 10 lines 29-57);

attributing a ring-2 current privilege level to a first task, nominally giving said first task more privilege than a second plurality of tasks which are attributed with a ring-3 current privilege. Parmar teaches ‘The 4 rings or privilege levels are identified by integers 0-3; each ring represents a level of privilege in the system with level 0 having the most privilege and level 3 the least. Level 0 is known as the inner ring and level 3 as the outer ring. (Fig. 3, col. 4 lines 24-60, col. 8 lines 31-67, col. 9 line 65- col. 10 line 5, table 1; col. 10 lines 29-57) and;

dynamically remapping each ring-2 current privilege level to a ring-3 privilege level, and each ring-3 privilege level to a ring-2 current privilege level prior to runtime privilege checking to cause said first task to execute in fact with less privileges than said second plurality of tasks(e.g. fig 2, and col. 4 lines 24-60, col. 9 line 45 – col. 11 line 50). In addition Parmar teaches that one ring may branch to another ring in order to change the privileges of the tasks. Finally, Parmar teaches many different rules of the system. One of the rule include an inward and outward remapping of procedure’s privilege in figure 2 element 202 and 203 show that it is legal to not only move inward but outward in the ring. Inward call details the procedure increasing the power of its process to do a job. However, outward call is just a call, task doesn’t change privilege level.

Kane teaches an inner task changing its privilege level outwardly (col. 18 lines 45-57). It would have been obvious to one skilled in the art at the time of the invention to combine the teachings of Kane and Parmar because Kane’s method

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of changing privilege level outwardly would increase flexibility of privilege levels in Parmar's system by having both an inward and outward privilege changing ability.

28. As per claim 15, Parmar teaches second plurality of tasks are associated with an operating system (col. 11 lines 3-17).

29. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Parmar et al (hereinafter Parmar) (3,916,385).

30. As per claim 14, Parmar does not specifically teaches wherein said first task is associated with an Internet application. Official notice is taken that tasks assigned to Internet application are well known. It would be obvious to one skilled in the art to use an Internet application as a first task in order to provide a source of external communications.

***Response to Arguments***

31. Applicant's arguments filed 9/10/04 have been fully considered but they are not persuasive.

32. Applicant argues in substance that Kane et al does not teach current privilege level.

33. Examiner respectfully disagrees with applicant's remark. Kane et al clearly teaches the use of current privilege level (col. 10 lines 27-35).

***Conclusion***

34. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).
35. A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.
36. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nilesh Shah whose telephone number is (571)272-3771. The examiner can normally be reached on 9-5.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Meng An can be reached on (571)272-3756. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Nilesh Shah  
Examiner  
Art Unit 2127

NS  
January 28, 2005

  
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